



## UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P O Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

## NOTICE OF ALLOWANCE AND FEE(S) DUE

29683 7590 08/30/2010

HARRINGTON & SMITH  
4 RESEARCH DRIVE, Suite 202  
SHELTON, CT 06484-6212

EXAMINER

CHO, UN C

ART UNIT

PAPER NUMBER

2617

DATE MAILED: 08/30/2010

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/762,922 02/14/2001

Kari Einamo

800.0320.U1 (US)

1058

TITLE OF INVENTION: TRACING OF SIGNALLING MESSAGES

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$0	\$0	\$1510	11/30/2010

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED.** THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

**THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED.** SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

## HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER:** Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

# PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail**

**Mail Stop ISSUE FEE  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
or Fax (571)-273-2885**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

29683 7590 08/30/2010

**HARRINGTON & SMITH  
4 RESEARCH DRIVE, Suite 202  
SHELTON, CT 06484-6212**

## Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/762,922 02/14/2001

Kari Einamo

800.0320.U1 (US)

1058

TITLE OF INVENTION: TRACING OF SIGNALLING MESSAGES

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$0	\$0	\$1510	11/30/2010

EXAMINER	ART UNIT	CLASS-SUBCLASS
CHO, UN C	2617	455-432000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/147; Rev 03-02 or more recent) attached. Use of a **Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1  
(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2  
3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.111. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY AND STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee  
☐ Publication Fee (No small entity discount permitted)  
☐ Advance Order - # of Copies \_\_\_\_\_

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.  
☐ Payment by credit card. Form PTO-2038 is attached.  
☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number \_\_\_\_\_ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature \_\_\_\_\_ Date \_\_\_\_\_

Typed or printed name \_\_\_\_\_ Registration No. \_\_\_\_\_

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P O Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/762,922	02/14/2001	Kari Einamo	800.0320.U1 (US)	1058
29683	7590	08/30/2010	EXAMINER	
HARRINGTON & SMITH 4 RESEARCH DRIVE, Suite 202 SHELTON, CT 06484-6212				
			CHO, UN C	
			ART UNIT	PAPER NUMBER

2617  
DATE MAILED: 08/30/2010

## Determination of Patent Term Extension under 35 U.S.C. 154 (b)

(application filed after June 7, 1995 but prior to May 29, 2000)

The Patent Term Extension is 0 day(s). Any patent to issue from the above-identified application will include an indication of the 0 day extension on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Extension is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

**Notice of Allowability****Application No.**

09/762,922

**Examiner**

UN C. CHO

**Applicant(s)**

EINAMO, KARI

**Art Unit**

2617

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERIT IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 6/11/2010.
2. ☒ The allowed claim(s) is/are 1,2,4-6,21,22,24-28 and 30-33.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some\* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_.

/UN C. CHO/  
Primary Examiner, Art Unit 2617

### **EXAMINER'S AMENDMENT**

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Ricardo Ochoa (Reg. No. 61,545) on 8/25/2010.

The application has been amended as follows:

#### **IN THE CLAIMS:**

**Claim 1** has been replaced with the amended claim shown below.

1. **(Currently Amended)** A method, comprising:

receiving a signaling message in a functional entity for subscriber mobility management in a mobile communication system;

receiving a trace command, the trace command identifying at least one subscriber whose signaling messages are to be traced and identifying a tracer to which information obtained during tracing is sent;

receiving a start message of a dialogue;

in response to receiving the start message, determining whether the dialogue is related to the subscriber to be traced; and

in response to determining that the dialogue is related to the subscriber to be traced, adding the dialogue to a list of traced dialogues,

where determining that the signaling message is related to the at least one subscriber comprises: determining whether the signaling message belongs to a traced dialogue on the list of traced dialogues; and

in response to determining that the signaling message is related to the at least one subscriber, sending, from the functional entity to the tracer, a copy of the signaling message, wherein the copy of the signaling message sent to the tracer is identical to the received signaling message.

**Claim 3** has been cancelled.

**Claim 4**, line 1: "The method according to claim 3," has been replaced with --The method according to claim 1,--.

**Claim 21** has been replaced with the amended claim shown below.

21. **(Currently Amended)** An apparatus, comprising at least one processor; and at least one memory including computer program code, the at least one memory and the computer program code configured to, with the at least one processor, cause the apparatus to perform at least the following:

to receive a trace command, the trace command identifying at least one subscriber whose signaling messages are to be traced and identifying a tracer to which information obtained during tracing is sent;

to receive a signaling message;

to receive a start message of a dialogue;

in response to receiving the start message, to determine whether the dialogue is related to the subscriber to be traced; and

in response to determining that the dialogue is related to the subscriber to be traced, to add the dialogue to a list of traced dialogues,

where, when determining that the signaling message is related to the at least one subscriber, the at least one memory and the computer program code are further configured to cause the apparatus to determine whether the signaling message belongs to a traced dialogue on the list of traced dialogues; and

in response to determining that the signaling message is related to the at least one subscriber, to send, from the functional entity to the tracer, a copy of the signaling message, wherein the copy of the signaling message sent to the tracer is identical to the received signaling message.

**Claim 23** has been cancelled.

**Claim 24**, line 1: "The method according to claim 23," has been replaced with --  
The method according to claim 21,--.

**Claim 27** has been replaced with the amended claim shown below.

**27. (Currently Amended)** A non-transitory computer readable medium tangibly encoded with a computer program executable by a processor to perform actions comprising:

receiving a trace command, the trace command identifying at least one subscriber whose signaling messages are to be traced and identifying a tracer to which information obtained during tracing is sent;

receiving a signaling message;

receiving a start message of a dialogue;

in response to receiving the start message, determining whether the dialogue is related to the subscriber to be traced; and

in response to determining that the dialogue is related to the subscriber to be traced, adding the dialogue to a list of traced dialogues,

where determining that the signaling message is related to the at least one subscriber comprises: determining whether the signaling message belongs to a traced dialogue on the list of traced dialogues; and

in response to determining that the signaling message is related to the at least one subscriber, sending, from the functional entity to the tracer, a copy of the signaling message, wherein the copy of the signaling message sent to the tracer is identical to the received signaling message.

**Claim 29** has been cancelled.

**Claim 30**, line 1: "The computer readable medium according to claim 29," has been replaced with --The non-transitory computer readable medium according to claim 27,--.

**Claims 31 and 32** line 1: "The computer readable medium according to claim 27," has been replaced with --The non-transitory computer readable medium according to claim 27,--.

**Claim 33** has been replaced with the amended claim shown below.

**33. (Currently Amended)** An apparatus, comprising: means for receiving a trace command, the trace command identifying at least one subscriber whose signaling



messages are to be traced and identifying a tracer to which information obtained during tracing is sent;

means for receiving a signaling message in a functional entity for subscriber mobility management in a mobile communication system;

means for receiving a start message of a dialogue;

means for determining whether the dialogue is related to the subscriber to be traced in response to receiving the start message;

means for adding the dialogue to a list of traced dialogues in response to determining that the dialogue is related to the subscriber to be traced; and

means for determining that the signaling message is related to the at least one subscriber, which comprise: means for determining whether the signaling message belongs to a traced dialogue on the list of traced dialogues; and

means for sending, from the functional entity to the tracer, a copy of the signaling message in response to determining that the signaling message is related to the at least one subscriber, wherein the copy of the signaling message sent to the tracer is identical to the received signaling message.

**Claim 34** has been cancelled.

***Allowable Subject Matter***

2. Claims 1, 2, 4 – 6, 21, 22, 24 – 28, 30 – 33 are allowed.
3. The following is an examiner's statement of reasons for allowance:

Applicant's invention is drawn to tracing of signaling messages related to a subscriber in a mobile communication system, and particularly to tracing signaling messages of a specific subscriber.

Applicant's independent claim 1 recites, *inter alia*, a method of tracing the subscriber whose messages are to be monitored with a structure as defined in the specification (pages 7 – 13) including receiving a start message of a dialogue; in response to receiving the start message, determining whether the dialogue is related to the subscriber to be traced; and in response to determining that the dialogue is related to the subscriber to be traced, adding the dialogue to a list of traced dialogues, where determining that the signaling message is related to the at least one subscriber comprises: determining whether the signaling message belongs to a traced dialogue on the list of traced dialogues; and in response to determining that the signaling message is related to the at least one subscriber, sending, from the functional entity to the tracer, a copy of the signaling message, wherein the copy of the signaling message sent to the tracer is identical to the received signaling message. Applicant's independent claims 1, 21, 27 and 33 comprise a particular combination of elements, which is neither taught nor suggested by the prior art.

Accordingly, applicant's claims are allowed for these reasons and for the reasons recited by applicant in the amendment filed on 6/11/2010.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to UN C. CHO whose telephone number is (571)272-7919. The examiner can normally be reached on 9:00AM - 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Eng can be reached on 571-272-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/UN C. CHO/  
Primary Examiner, Art Unit 2617